

Appl. No. : 09/397,952
Filed : September 17, 1999

REMARKS

Rejections Under 35 U.S.C. § 103

The Examiner continues to reject all pending claims as being unpatentable over Ahmad et al. (U.S. Patent No. 5,405,791) in view of Arai et al. (U.S. Patent No. 5,972,783). Each of the pending claims specifically recites a process in which nitrogen implantation is followed by source/drain reoxidation. In the office action, however, the Examiner fails to acknowledge the sequence of steps recited in the claims.

While the Examiner appears to concede that the sequence of nitrogen implantation relative to a source/drain reoxidation is not established by either of the references, individually or in combination, the Examiner relies upon *Ex parte Rubin*, 128 USPQ 440 (Pat. Bd. App. 1959), and *In re Burhans*, 154 F.2d 690 (CCPA 1946), for the proposition that altering the order of method steps shown in the prior art is not patentable unless the order of the steps recited in the claims produces unexpected or advantageous results. This proposition is inapposite in the present case, however, because Applicant has specifically taught advantages and differences in the operation of a sequence in which nitrogen implantation is followed by a thermal oxidation step, as clearly set forth in the following excerpt from the specification:

Unlike prior art drive steps, however, oxidation of the substrate causes upward migration and consumption of silicon atoms from the implanted areas 118 (as well as from the gate poly 112) to form the oxide layer 130. This is accompanied by upward motion of implanted nitrogen atoms. The nitrogen concentration difference between the growing oxide layer and the implanted areas 118 provides the driving force for the reaction. Thus, the implanted nitrogen atoms migrate to the growing oxide layer 130 at the substrate surface and a silicon nitride layer 131 is formed over the implanted source/drain regions 11.

Application at p. 6, ll. 24-31.

Because the order of the method steps recited in the claims produces unexpected and advantageous results over the methods described in Ahmad and Arai, *Rubin* and *Burhans* are inapplicable, and Applicant respectfully submits that the claims are patentable over the prior art of record.

CONCLUSIONS

In view of the foregoing remarks, Applicant respectfully submits that the application is in condition for allowance and respectfully requests the same. If, however, some issue remains that

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the Examiner feels can be addressed by Examiner Amendment, the Examiner is cordially invited to call the undersigned for authorization.

Respectfully submitted,

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